

REMARKS

In the non-final Office Action, the Examiner objects to claims 1, 3-10, 12-17, and 22-40 because of minor informalities; rejects claims 1, 3, 4, 8, 16, 17, 22-26, and 36-40 under 35 U.S.C. § 103(a) as unpatentable over BARHAM et al. (U.S. Patent No. 6,721,371) in view of YASUDA et al. (U.S. Patent No. 6,466,913); rejects claims 5-7, 13, 27-29, and 33 under 35 U.S.C. § 103(a) as unpatentable over BARHAM et al. in view of YASUDA et al., and further in view of QUIGLEY et al. (U.S. Patent No. 6,650,624); rejects claims 14, 15, 34, and 35 under 35 U.S.C. § 103(a) as unpatentable over BARHAM et al. in view of YASUDA et al., and further in view of PEYROVIAN (U.S. Patent No. 5,768,682); and rejects claims 9, 10, 12, and 30-32 under 35 U.S.C. § 103(a) as unpatentable over BARHAM et al. in view of YASUDA et al., and further in view of QUIGLEY et al., and still further in view of the Applicant's admitted prior art in Fig. 17(A). Applicant respectfully traverses these rejections.

By way of this Amendment, Applicant amends the specification and claims 4-10, 12-17, 22, 23, and 26-40 to improve form. No new matter has been introduced by way of the present amendment. Claims 1, 3-10, 12-17, and 22-40 remain pending in the present application.

Objection to the claims

Claims 1, 3-10, 12-17, and 22-40 stand objected because the claims allegedly contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventor, at the time the application was filed, had possession of the claimed invention. To address this objection, Applicant

amends the specification, in accordance with the Examiner's helpful suggestion, to include the language of original claims 1-23, which are part of the application as-filed. Accordingly, Applicant respectfully requests that the Examiner reconsider and withdraw the objection to claims 1, 3-10, 12-17, and 22-40.

Rejection under 35 U.S.C. § 103(a) based on BARHAM et al. and YASUDA et al.

Claims 1, 3, 4, 8, 16, 17, 22-26, and 36-40 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over BARHAM et al. in view of YASUDA et al. Applicant respectfully traverses this rejection.

Independent claim 1 is directed to a method for provisioning multiple digital receivers. The method includes providing an analog to digital converter having an analog input and a digital output; providing a plurality of digital receivers, each receiver having a programmable center frequency, where the plurality of digital receivers are configured to receive digitized samples from the analog to digital converter and where each of the plurality of digital receivers includes a low-pass digital filter; maintaining pre-computed sets of filter coefficients in non-volatile storage, each set corresponding to one of the plurality of low-pass digital filters, each filter having one of a predetermined set of bandwidths; receiving a request to provision a selected one of the plurality of digital receivers; selecting a first center frequency and first bandpass bandwidth for provisioning the selected one of the plurality of digital receivers; retrieving the filter coefficients associated with the first bandpass bandwidth; subjecting the retrieved filter coefficients to a bandpass transformation corresponding to the first center frequency; and loading the transformed filter coefficients into coefficient latches in the selected one of the plurality

of digital receivers. BARHAM et al. and YASUDA et al., whether taken alone or in any reasonable combination, do not disclose or suggest this combination of features.

For example, BARHAM et al. and YASUDA et al. do not disclose or suggest subjecting the retrieved filter coefficients to a bandpass transformation corresponding to the first center frequency. The Examiner appears to admit that BARHAM et al. does not disclose this feature and relies on 7, lines 1-9, of YASUDA et al. as allegedly disclosing this feature (Office Action, p. 5). Applicant respectfully disagrees with the Examiner's interpretation of YASUDA et al.

At col. 7, lines 1-10, YASUDA et al. discloses:

The ADC 311 inputs an analog right-channel sound signal (R CH INPUT), and converts the input signal into a digital signal. The ADC 311 supplies the digital signal to each of the inputs of the FIR filter 312a and the FIR filter 312b. The coefficient buffer 313a stores filter coefficients of the FIR filter 312a which are read from the coefficient ROM 302 and transmitted by the CPU 301. The coefficient buffer 313b stores filter coefficients of the FIR filter 312b which are read from the coefficient ROM 302 and transmitted by the CPU 301.

This section of YASUDA et al. discloses that filter coefficients are read from a coefficient ROM 302 by a CPU 301 and transmitted to a coefficient buffer 313a. This section of YASUDA et al. in no way discloses or suggests subjecting the retrieved filter coefficients to a bandpass transformation corresponding to the first center frequency, as recited in claim 1. Reading and transmitting filter coefficients are not equivalent to subjecting the retrieved filter coefficients to a bandpass transformation corresponding to the first center frequency, as recited in claim 1.

Since BARHAM et al. and YASUDA et al. do not disclose or suggest subjecting the retrieved filter coefficients to a bandpass transformation corresponding to the first

center frequency, BARHAM et al. and YASUDA et al., whether taken alone or in any reasonable combination, cannot disclose or suggest loading the transformed filter coefficients into coefficient latches in the selected one of the plurality of digital receivers, as also recited in claim 1.

For at least these reasons, Applicant submits that claim 1 is patentable over BARHAM et al. and YASUDA et al., whether taken alone or in any reasonable combination. Accordingly, Applicant respectfully requests that the Examiner reconsider and withdraw the rejection of claim 1 under 35 U.S.C. § 103(a) based on BARHAM et al. and YASUDA et al.

Claims 3, 4, 8, 16, 17, 22, and 23 depend from claim 1. Therefore, Applicant submits that these claims are patentable over BARHAM et al. and YASUDA et al., whether taken alone or in any reasonable combination, for at least the reasons set forth above with respect to claim 1. Accordingly, Applicant respectfully requests that the Examiner reconsider and withdraw the rejection of claims 3, 4, 8, 16, 17, 22, and 23 under 35 U.S.C. § 103(a) based on BARHAM et al. and YASUDA et al. Moreover, these claims are patentable over BARHAM et al. and YASUDA et al. for reasons of their own.

For example, claim 8 recites that the analog to digital converter, the plurality of digital receivers, and the non-volatile storage (for maintaining the pre-computed sets of filter coefficients) are implemented on a single integrated circuit. The Examiner relies on col. 3, lines 53-55, col. 4, lines 45-50, and col. 5, lines 49-57 of BARHAM et al. for allegedly disclosing this feature (Office Action, pp. 6-7). Applicant respectfully disagrees with the Examiner's interpretation of BARHAM et al.

As an initial matter, Applicant is confused as to the basis for the Examiner's rejection. In rejecting claim 1 (from which claim 8 depends), the Examiner admits that BARHAM et al. does not disclose or suggest "maintaining pre-computed sets of filter coefficients in non-volatile storage" (Office Action, p. 4). Accordingly, Applicant submits that the Examiner cannot reasonably rely on BARHAM et al. for disclosing that the analog to digital converter, the plurality of digital receivers, and the non-volatile storage (for maintaining the pre-computed sets of filter coefficients) are implemented on a single integrated circuit, as recited in claim 8. It would seem that, if BARHAM et al. does not disclose non-volatile storage for maintaining the pre-computed sets of filter coefficients, then BARHAM et al. cannot reasonably be construed to disclose that the analog to digital converter, the plurality of digital receivers, and the non-volatile storage (for maintaining the pre-computed sets of filter coefficients) are implemented on a single integrated circuit.

The Examiner appears to suggest that the bank or array of IC demodulators 10 correspond to this feature (Office Action, p. 7). Col. 3, lines 53-55, of BARHAM et al. discloses a bank or array of IC demodulators 10, where one of the demodulators is designated as the master or first demodulator 10A. Col. 4, lines 45-50 of BARHAM et al. discloses that the coherent processor and the weight processor components are linked with the coherent memory to provide wide configurability through a programmable input port. Col. 5, lines 49-57 of BARHAM et al. discloses that each RADIS 10 includes a front end 12 that performs DC removal, phase shifting, accumulation, and down-sampling of the input IQ signals. The output of the front end 12 is applied to the FIR

filter 14. This section also discloses that a set of registers form a weight stack ring coupled to an external processor.

Contrary to the Examiner's allegations, these sections of BARHAM et al. do not disclose or even remotely suggest that the analog to digital converter, the plurality of digital receivers, and the non-volatile storage for maintaining the pre-computed sets of filter coefficients are implemented on a single integrated circuit, as recited in claim 8. In fact, no disclosure of a non-volatile storage for maintaining the pre-computed sets of filter coefficients is provided in BARHAM et al.

The disclosure of YASUDA et al. does not remedy this deficiency.

For at least these additional reasons, Applicant submits that claim 8 is patentable over BARHAM et al. and YASUDA et al., whether taken alone or in any reasonable combination. Accordingly, Applicant respectfully requests that the Examiner reconsider and withdraw the rejection of claim 8 under 35 U.S.C. § 103(a) based on BARHAM et al. and YASUDA et al.

Independent claim 24 recites features similar to (yet possibly of different scope than) features described above with respect to claim 1. Therefore, Applicant submits that claim 24 is patentable over BARHAM et al. and YASUDA et al., whether taken alone or in any reasonable combination, for at least reasons similar to reasons set forth above with respect to claim 1. Accordingly, Applicant respectfully requests that the Examiner reconsider and withdraw the rejection of claim 24 under 35 U.S.C. § 103(a) based on BARHAM et al. and YASUDA et al.

Claims 25, 26, and 36-40 depend from claim 24. Therefore, Applicant submits that these claims are patentable over BARHAM et al. and YASUDA et al., whether taken alone or in any reasonable combination, for at least the reasons set forth above with respect to claim 24. Accordingly, Applicant respectfully requests that the Examiner reconsider and withdraw the rejection of claims 25, 26, and 36-40 under 35 U.S.C. § 103(a) based on BARHAM et al. and YASUDA et al. Moreover, these claims are patentable over BARHAM et al. and YASUDA et al. for reasons of their own.

For example, claim 36 recites features similar to (yet possibly of different scope than) features described above with respect to claim 8. Therefore, Applicant submits that claim 36 is patentable over BARHAM et al. and YASUDA et al., whether taken alone or in any reasonable combination, for at least reasons similar to reasons set forth above with respect to claim 8. Accordingly, Applicant respectfully requests that the Examiner reconsider and withdraw the rejection of claim 36 under 35 U.S.C. § 103(a) based on BARHAM et al. and YASUDA et al.

***Rejection under 35 U.S.C. § 103(a) based on
BARHAM et al., YASUDA et al., and QUIGLEY et al.***

Claims 5-7, 13, 27-29, and 33 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over BARHAM et al. in view of YASUDA et al., and further in view of QUIGLEY et al. Applicant respectfully traverses this rejection.

Claims 5-7 and 13 depend from claim 1. Without acquiescing in the rejection of claims 5-7 and 13, Applicant respectfully submits that the disclosure of QUIGLEY et al. does not remedy the deficiencies in the disclosures of BARHAM et al. and YASUDA et al. set forth above with respect to claim 1. Therefore, Applicant submits that claims 5-7

and 13 are patentable over BARHAM et al., YASUDA et al., and QUIGLEY et al., whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 1. Accordingly, Applicant respectfully requests that the Examiner reconsider and withdraw the rejection of claims 5-7 and 13 under 35 U.S.C. § 103(a) based on BARHAM et al., YASUDA et al., and QUIGLEY et al.

Claims 27-29 and 33 depend from claim 24. Without acquiescing in the rejection of claims 27-29 and 33, Applicant respectfully submits that the disclosure of QUIGLEY et al. does not remedy the deficiencies in the disclosures of BARHAM et al. and YASUDA et al. set forth above with respect to claim 24. Therefore, Applicant submits that claims 27-29 and 33 are patentable over BARHAM et al., YASUDA et al., and QUIGLEY et al., whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 24. Accordingly, Applicant respectfully requests that the Examiner reconsider and withdraw the rejection of claims 27-29 and 33 under 35 U.S.C. § 103(a) based on BARHAM et al., YASUDA et al., and QUIGLEY et al.

**Rejection under 35 U.S.C. § 103(a) based on
BARHAM et al., YASUDA et al., and PEYROVIAN**

Claims 14, 15, 34, and 35 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over BARHAM et al. in view of YASUDA et al., and further in view of PEYROVIAN. Applicant respectfully traverses this rejection.

As an initial matter, Applicant again notes that this rejection is improper. Claims 14 and 15 depend from claim 5 and claims 34 and 35 depend from claim 27. Claims 5 and 27 stand rejected under 35 U.S.C. § 103(a) based on BARHAM et al., YASUDA et

al., and QUIGLEY et al. Accordingly, any rejection of claims 14, 15, 34, and 35 must be based on BARHAM et al., YASUDA et al., and QUIGLEY et al. Since the Examiner rejects claims 14, 15, 34, and 35 under 35 U.S.C. § 103(a) based on BARHAM et al., YASUDA et al., and PEYROVIAN, the rejection of these claims is improper.

Claims 14 and 15 depend from claim 5. Without acquiescing in the rejection of claims 14 and 15, Applicant respectfully submits that the disclosure of PEYROVIAN does not remedy the deficiencies in the disclosures of BARHAM et al., YASUDA et al., and QUIGLEY et al. set forth above with respect to claim 5. Therefore, Applicant submits that claims 14 and 15 are patentable over BARHAM et al., YASUDA et al., QUIGLEY et al., and PEYROVIAN, whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 5. Accordingly, Applicant respectfully requests that the Examiner reconsider and withdraw the rejection of claims 14 and 15 under 35 U.S.C. § 103(a) based on BARHAM et al., YASUDA et al., QUIGLEY et al., and PEYROVIAN.

Claims 34 and 35 depend from claim 27. Without acquiescing in the rejection of claims 34 and 35, Applicant respectfully submits that the disclosure of PEYROVIAN does not remedy the deficiencies in the disclosures of BARHAM et al., YASUDA et al., and QUIGLEY et al. set forth above with respect to claim 27. Therefore, Applicant submits that claims 34 and 35 are patentable over BARHAM et al., YASUDA et al., QUIGLEY et al., and PEYROVIAN, whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 27. Accordingly, Applicant respectfully requests that the Examiner reconsider and withdraw the rejection

of claims 14 and 15 under 35 U.S.C. § 103(a) based on BARHAM et al., YASUDA et al., QUIGLEY et al., and PEYROVIAN.

***Rejection under 35 U.S.C. § 103(a) based on BARHAM et al., YASUDA et al.,
QUIGLEY et al., and Applicant's Allegedly Admitted Prior Art***

Claims 9, 10, 12, and 30-32 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over BARHAM et al. in view of YASUDA et al., further in view of QUIGLEY et al., and further in view of Applicant's allegedly admitted prior art in FIG. 17(A). Applicant respectfully traverses this rejection.

Claims 9, 10, and 12 depend from claim 5. Without acquiescing in the rejection of claims 9, 10, and 12, Applicant respectfully submits that Applicant's Fig. 17(A) does not remedy the deficiencies in the disclosures of BARHAM et al., YASUDA et al., and QUIGLEY et al. set forth above with respect to claim 5. Therefore, Applicant submits that claims 9, 10, and 12 are patentable over BARHAM et al., YASUDA et al., QUIGLEY et al. and Applicant's Fig. 17(A), whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 5. Accordingly, Applicant respectfully requests that the Examiner reconsider and withdraw the rejection of claims 9, 10, and 12 under 35 U.S.C. § 103(a) based on BARHAM et al., YASUDA et al., QUIGLEY et al., and Applicant's Fig. 17(A).

Claims 30-32 depend from claim 27. Without acquiescing in the rejection of claims 30-32, Applicant respectfully submits that Applicant's Fig. 17(A) does not remedy the deficiencies in the disclosures of BARHAM et al., YASUDA et al., and QUIGLEY et al. set forth above with respect to claim 27. Therefore, Applicant submits that claims 30-32 are patentable over BARHAM et al., YASUDA et al., QUIGLEY et al., and

Applicant's Fig. 17(A) whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 27. Accordingly, Applicant respectfully requests that the Examiner reconsider and withdraw the rejection of claims 30-32 under 35 U.S.C. § 103(a) based on BARHAM et al., YASUDA et al., QUIGLEY et al., and Applicant's Fig. 17(A).

Conclusion

In view of the foregoing amendments and remarks, Applicant respectfully requests the withdrawal of the outstanding objections and rejections and the timely allowance of this application.

As Applicant's remarks with respect to the Examiner's rejections are sufficient to overcome these rejections, Applicant's silence as to assertions by the Examiner in the Office Action or certain requirements that may be applicable to such assertions (e.g., whether a reference constitutes prior art, reasons to modify a reference and/or reasons to combine references, etc.) is not a concession by Applicant that such assertions are accurate or such requirements have been met, and Applicant reserves the right to analyze and dispute such assertions/requirements in the future.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1070 and please credit any excess fees to such deposit account.

Respectfully submitted,

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